Remarks

This is in response to the Office Action dated December 8, 2009. In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

Rejections under 35 U.S.C §103(a):

Claims 1, 7-9, 12-13, and 16-21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima (US Pub. 2002/0032025) in view of Wang (US Pub. 2006/0244624). This rejection is submitted to be inapplicable to the above claims, as amended, for the following reasons.

Claim 1 recites, in part, an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further configured to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion, and a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued, wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued.

According to the above features as recited in claim 1, the terminal (i) issues the substitute frame during the second time period, if the control station is disconnected (the terminal becomes a substitute control station), (ii) becomes a new control station, if the control station does not recover within the second time period, and (iii) stops issuing the substitute frame, if the control station recovers within the second time period. Issuing a substitute frame is different from the terminal actually becoming the control station. The substitute control station maintains the state of the network so that it is the same as it was when the control station most recently controlled

the network. It does this by issuing a substitute frame, which is a copy of the control frame most recently issued by the control station. The terminal acting as the substitute control station is still operating as a controlled terminal. In contrast to a substitute control station, the control station controls the communication network dynamically by allocating a transmission resource and issuing the control frame in response to the request from other terminals.

Thus, the terminal recited in claim 1 issues the substitute frame after detecting that the control station is disconnected and before becoming a new control station. This way media access is guaranteed (i.e., the state of the network at the most recent time the control station controlled the network is maintained) even during the second time period during which the control station is absent. The above features, as recited in claim 1, are not disclosed or suggested by the combination of Maeshima and Wang.

As discussed in the amendment filed on October 21, 2009, Maeshima discloses a terminal that becomes a new control station, when the control station is disconnected. However, Maeshima does not disclose issuing a substitute frame during the second period, when the control station is disconnected, thus guaranteeing media access. Therefore, Maeshima does not disclose or suggest an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further configured to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion, and a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued, wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued, as recited in claim 1. Wang also fails to disclose or suggest the above features as recited in claim 1.

Wang discloses that a backup master is able to take control of a network once a master malfunction is automatically detected (see paragraph 18). In addition, Wang discloses that a

slave waits a certain delay time before taking any action, in case the master becomes operational again (see paragraph 26). Thus, Wang discloses that the slave waits a delay time (i.e., the 2nd time period), and if the control station does not recover, the slave becomes the control station. Alternately, if the master does recover, the slave remains a slave.

However, Wang does not disclose issuing a substitute frame during the second period, when the control station is disconnected, thus guaranteeing media access. Therefore, Wang does not disclose or suggest an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further configured to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion, and a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued, wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued, as recited in claim 1.

Accordingly, no obvious combination of Maeshima and Wang, would result in, or otherwise render obvious under 35 U.S.C. §103(a), the features recited in claim 1. Therefore, claim 1 is patentable over the combination of Maeshima and Wang.

To further illustrate the above described differences, a chart has been provided below.

	During 1st time period:	After 1st time period	During 2nd time period	After 2nd time period
Claim 1 of Present Application:	Operate in controlled terminal mode.	Detect disconnection of control station.	**Issue substitute frame** (while remaining in controlled terminal mode), **and if the control station recovers within 2nd period, stop issuing substitute frame.**	1) If control station doesn't recover within the 2nd time period, shift into control station mode. 2) If control station does recover within the 2nd time period, remain in controlled terminal mode.
Disclosure of Maeshima	Operate in controlled terminal mode.	Detect disconnection of control station.	Shift into control station mode.	Remain in control station mode.
Disclosure of Wang:	Operate in controlled terminal mode.	Detect disconnection of control station.	Standby (while remaining in controlled terminal mode)	1) If control station doesn't recover within the 2nd time period, shift into control station mode. 2) If control station does recover within the 2nd time period, remain in controlled terminal mode.

*** Differences between claim 1 and the prior art shown in bold.**

Claim 19 is patentable over the combination of Maeshima and Wang for the same reasons as those discussed above with regard to independent claim 1. Specifically, claim 19 recites an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further operable to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion, and a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued, wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued. As a result, claim 19 is patentable over the combination of Maeshima and Wang.

Claims 18 and 20 are patentable over the combination of Maeshima and Wang for reasons similar to those discussed above with regard to independent claim 1. Specifically, claims

18 and 20 recite periodically issuing a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, causing the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, and causing the transmission and reception unit to transmit the substitute frame, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion, and causing the terminal which has been operating as the substitute control station to operate as the control station, unless the control frame issued by the control station is newly detected before a predetermined second time period elapses after the substitute frame has been started to be issued, wherein the periodic issuing of the substitute frame stops when the control frame is newly detected before the predetermined second time period elapses after the substitute frame has been started to be issued. As a result, claims 18 and 20 are patentable over the combination of Maeshima and Wang.

Claims 7-9, 12-13, 16-17, and 21 are either directly or indirectly dependent on independent claim 1. As a result, claims 7-9, 12-13, 16-17, and 21 are allowable over the combination of Maeshima and Wang, at least based on their dependency from claim 1.

Claim 3 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima (US Pub. 2002/0032025) in view of Wang (US Pub. 2006/0244624) and further in view of Kita (US Pub. 2003/0054821).

Claim 3 is dependent on independent claim 1 discussed above.

Kita is relied upon in the rejection as disclosing that a response frame is issued indicating that a request from a slave terminal is rejected. However, it is apparent that Kita fails to disclose or suggest the features lacking from Maeshima and Wang discussed above with regard to independent claim 1. Accordingly, no obvious combination of Maeshima, Wang, and Kita would result in, or otherwise render obvious under 35 U.S.C. §103(a), the features recited in claims 1 and 3. Therefore, claim 3 is patentable over the combination of Maeshima, Wang, and Kita, at least based on its dependency from claim 1.

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima (US Pub. 2002/0032025) in view of Wang (US Pub. 2006/0244624) and further in view of Spartz (US Pub. 2004/0002338).

Claim 4 is dependent on independent claim 1 discussed above.

Spartz is relied upon in the rejection as disclosing that a base station may ignore the request of a mobile station for establishing a communication link. However, it is apparent that Spartz fails to disclose or suggest the features lacking from Maeshima and Wang discussed above with regard to independent claim 1. Accordingly, no obvious combination of Maeshima, Wang, and Spartz would result in, or otherwise render obvious under 35 U.S.C. §103(a), the features recited in claims 1 and 4. Therefore, claim 4 is patentable over the combination of Maeshima, Wang, and Spartz, at least based on its dependency from claim 1.

Claims 10-11 and 14-15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima (US Pub. 2002/0032025) in view of Wang (US Pub. 2006/0244624) and further in view of Isumi (US 5,815,816).

Claims 10-11 and 14-15 are ultimately dependent on independent claim 1 discussed above.

Isumi is relied upon in the rejection as disclosing a competition with another terminal to acquire access to a communication medium. However, it is apparent that Isumi fails to disclose or suggest the features lacking from the combination of Maeshima and Wang discussed above with regard to independent claim 1. Accordingly, no obvious combination of Maeshima, Wang, and Isumi would result in, or otherwise render obvious under 35 U.S.C. §103(a), the features recited in claims 1, 10-11, and 14-15. Therefore, claims 10-11 and 14-15 are patentable over the combination of Maeshima, Wang, and Isumi, at least based on their dependency from claim 1.

Because of the above-mentioned distinctions, it is believed clear that claims 1, 3, 4 and 7-21 are allowable over the references relied upon in the rejections. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of the invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1, 3, 4 and 7-21. Therefore, it is submitted that claims 1, 3, 4 and 7-21 are clearly allowable over the prior art of record.

In view of the above amendment and remarks, it is submitted that the present application is now in condition for allowance. The examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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By 2010.03.08 14:17:40 -05'00'

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March 8, 2010